

ART. XV.—*On a New Species of Capulus found attached to a Pterygotus Carapace.*

By FREDK. CHAPMAN, A.L.S., F.G.S., etc.

(Commonwealth Palaeontologist, National Museum, Melbourne.)

(With Plate XXIII.)

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Introduction.

Some years ago Sir Frederick McCoy (1899) described a new species of *Pterygotus* (*P. australis*) from the hard blue shale of South Yarra, near Melbourne. The rock in which it was found belongs to the lower or Melbournian stage of the Silurian.

This specimen of *Pterygotus* is represented by both the holotype of a somite figured by McCoy and the counterpart on which the shells of *Capulus* are present. These specimens are in the National Museum collection.

The *Pterygotus* somite measures, post-anteriorly, 61 mm., and it has an estimated breadth of 165 mm. ($6\frac{1}{2}$ inches).

Soon after my arrival in Melbourne, in 1902, whilst examining the holotype I noticed that the surface of the carapace bore, besides the conspicuous scale-like markings, several depressed ovate areas which were not noted in McCoy's description. A wax or plasticine impression from these showed a valve in relief which then seemed to be referable to either *Pholidops* or *Orbiculoidea*, the latter genus as well as *Crania* being already known as a brachiopod commensal on cephalopod shells from the Palaeozoic of the United States of America.

Lately, whilst in conversation with Sir Edgeworth David on the subject of his recent discoveries of Eurypterids in the Proterozoic rocks of South Australia, he mentioned the occurrence of generally similar commensal limpet-like fossils. My interest in the Silurian specimens here described was thus revived.

The chief obstacles in referring the present fossils either to *Crania*, *Pholidops* or *Orbiculoidea* are:—

1. The absence of a cemented valve, or trace thereof.
2. The irregular growth stages of the shell surface, which in *Pholidops* are evenly developed.
3. The absence of a pedicle opening either of *Crania* or *Orbiculoidea*.

The only form to which we can reasonably assign the present specimens seems to be that of a member of the gasteropod genus *Capulus*, which ranges from Cambrian to Recent. I have been greatly helped in this comparison and diagnosis by finding a recent specimen of *Chlamys bifrons* from South Australia in the Dennant Collection, the valves of which are peppered over with small attached shells of an allied genus, *Hipponix*. A common character of both this recent—*H. conicus* (Schumacher) (May, 1921, 1923)—and the Silurian examples is the cleared area around the shell, a feature also to be noticed with living limpets.

It is very remarkable to find so close a resemblance in form, external structure and nearly equal dimensions, in the two Silurian and living genera and species.

In selecting his holotype of *Pterygotus* from the two specimens (counterparts) discovered by F. P. Spry in the Silurian mudstone, McCoy seems to have been influenced by the character of the ornament of the carapace. In the holotype this is a salient squamation, and agrees in the main with that seen in well-preserved specimens from England, North America and Bohemia. Apart from this general character of salient squamation, there appear parts of the carapace in other specimens which have an impressed ornament. So that my selection of the counterpart of McCoy's type of the South Yarra specimen of *Pterygotus* as the actual positive surface, on account of the appearance of the shells of *Capulus* in relief, is not without reason.

Description.

Class GASTEROPODA.

Family CAPULIDAE.

Genus *Capulus* Montfort.

CAPULUS MELBOURNENSIS, sp. nov.

(Plate XXIII., Fig. 1.)

Shell ovate, expanding in ephebic stage. Apex moderately high to depressed and incurved. Concentric growth lines distinct, with strong growth stages at intervals. In some examples an apical ridge extends down the middle of the shell. The shell is seated in a depressed area on the carapace of *Pterygotus australis*, similar to that seen in living examples of the allied genus *Hipponix* attached to *Chlamys* and other bivalves.

Length of holotype, 3.25 mm. Greatest width, 2.25 mm. Height, circ. 1 mm.

Occurrence.

Eleven specimens attached to the carapace of *Pterygotus australis* McCoy. Silurian (Melbournian). Domain Road, South



FIG. 1.



F.C. photo.

FIG. 2.

Sessile Gasteropods: Capulus (Silurian),
Hipponix (Recent).